

AMENDMENTS

IN THE CLAIMS:

Please cancel claims 11 and 45-52 without prejudice or disclaimer.

Please amend claims 1, 12, 24, 28, and 53-59 and add new claim 60 as follows:

1. (Currently amended) An electronic device, comprising:
a base comprising a pair of elongate flanges and a channel portion
therebetween, the channel portion having a substantially planar first surface, wherein
the pair of flanges extend generally perpendicularly from the first surface, and wherein
the pair of flanges are separated by a predetermined channel width;
a ceramic circuit board comprising a substantially planar second surface,
wherein the second surface is substantially parallel to the first surface and operable to
mate with the first surface within the channel width; and
an adhesive layer generally residing between the first surface and the second
surface, wherein the adhesive layer fixedly couples the first surface of the base to the
second surface of the circuit board,
wherein the pair of flanges are operable to substantially maintain the planarity of
the first surface and the second surface during a thermal expansion or contraction of
one or more of the base and the circuit board, wherein the base is associated with a
first coefficient of thermal expansion and the circuit board is associated with a second
coefficient of thermal expansion, and wherein the first coefficient of thermal expansion
and the second coefficient of thermal expansion are dissimilar.
2. (Original) The device of claim 1, wherein the circuit board further
comprises a third surface, wherein a thickness of the circuit board is measured between
the second surface and the third surface, and wherein at least one of the pair of flanges
extends a first distance from the first surface, wherein the first distance is associated
with the thickness of the circuit board.

3. (Original) The device of claim 2, wherein the first distance is greater than or approximately equal to the thickness of the circuit board.

4. (Original) The device of claim 2, wherein first distance is greater than or approximately equal to a sum of the thickness of the circuit board and a thickness of the adhesive layer.

5. (Original) The device of claim 2, wherein the pair of flanges extend the first distance from the first surface.

6. (Original) The device of claim 2, wherein the base further comprises a bottom surface, wherein a second distance is measured between the first surface and the bottom surface of the base, and wherein the second distance is further associated with the thickness of the circuit board.

7. (Original) The device of claim 6, wherein the second distance is less than five times the thickness of the circuit board.

8. (Original) The device of claim 6, wherein the bottom surface of the base is generally parallel to the first surface.

9. (Original) The device of claim 1, wherein the base is a contiguous piece of metal.

10. (Original) The device of claim 1, wherein the pair of flanges extend along a length of the channel, wherein the length of the channel is greater than or approximately equal to a length of the circuit board.

11. (Cancelled)

12. (Currently amended) The device of claim ~~14~~1, wherein the first coefficient of thermal expansion is greater than the second coefficient of thermal expansion.
13. (Original) The device of claim 1, wherein the base is comprised of copper or a copper alloy.
14. (Original) The device of claim 13, wherein the base is comprised of an alloy of copper and zirconium.
15. (Original) The device of claim 1, wherein the base is coated with one or more metal coatings.
16. (Original) The device of claim 15, wherein the one or more metal coatings comprise one or more of gold or nickel.
17. (Original) The device of claim 15, wherein a thickness of the one or more metal coatings is approximately 0.15 microinches.
18. (Original) The device of claim 1, wherein the adhesive layer is electrically conductive.
19. (Original) The device of claim 18, wherein the adhesive layer comprises silver or a silver alloy.
20. (Original) The device of claim 1, wherein the adhesive layer has a modulus of elasticity of about 80 MPa.

21. (Original) The device of claim 1, wherein the adhesive layer comprises a thermal-set epoxy.

22. (Original) The device of claim 1, wherein the base further comprises one or more secondary structures which extend generally perpendicularly to the first surface, and wherein the circuit board comprises one or more secondary cavities therein, wherein the one or more secondary structures are operable to generally reside within the respective one or more secondary cavities when the base is fixedly coupled to the circuit board.

23. (Original) An electronic device, comprising:
a metal base comprising a channel portion having a substantially planar first surface, the base further comprising a pair of flanges and one or more secondary structures which extend outwardly from the first surface, wherein a pair of flanges extend along a length of the first surface and are separated by a predetermined width, therein defining a channel therebetween;

a ceramic circuit board having a substantially planar second surface which is substantially parallel to the first surface, wherein the circuit board is generally defined by a length and a width, wherein the length and width of the circuit board are smaller than the respective length and width of the channel, wherein the circuit board resides within the channel; and

an epoxy layer generally residing between the first surface and the second surface, wherein the epoxy layer fixedly couples the first surface of the base to the second surface of the circuit board within the channel,

wherein the pair of flanges are operable to substantially maintain the planarity of the first surface and the second surface during a thermal expansion or contraction of one or more of the base and the circuit board.

24. (Currently amended) The device of claim 23, wherein the pair of flanges and the ~~plurality of segments~~ one or more secondary structures extend generally perpendicularly to the first surface.

25. (Original) The device of claim 23, wherein the circuit board further comprises a third surface, wherein a thickness of the circuit board is measured between the second surface and the third surface, and wherein at least one of the pair of flanges extends a first distance from the first surface, wherein the first distance is associated with the thickness of the circuit board.

26. (Original) The device of claim 25, wherein the first distance is greater than or approximately equal to the thickness of the circuit board.

27. (Original) The device of claim 25, wherein first distance is greater than or approximately equal to a sum of the thickness of the circuit board and a thickness of the epoxy layer.

28. (Currently amended) The device of claim 25, wherein the pair of ~~segments~~ flanges extend the first distance from the first surface.

29. (Original) The device of claim 25, wherein the base further comprises a bottom surface, wherein a second distance is measured between the first surface and the bottom surface of the base, and wherein the second distance is further associated with the thickness of the circuit board.

30. (Original) The device of claim 29, wherein the second distance is less than five times the thickness of the circuit board.

31. (Original) The device of claim 29, wherein the bottom surface of the base is generally parallel to the first surface.

32. (Original) The device of claim 23, wherein the metal base is a contiguous piece of metal.

33. (Original) The device of claim 23, wherein the pair of flanges extend along a length of the channel, wherein the length of the channel is greater than or approximately equal to a length of the circuit board.

34. (Original) The device of claim 23, wherein the base is associated with a first coefficient of thermal expansion and the circuit board is associated with a second coefficient of thermal expansion, wherein the first coefficient of thermal expansion and the second coefficient of thermal expansion are dissimilar.

35. (Original) The device of claim 34, wherein the first coefficient of thermal expansion is greater than the second coefficient of thermal expansion.

36. (Original) The device of claim 23, wherein the base is comprised of copper or a copper alloy.

37. (Original) The device of claim 23, wherein the base is comprised of an alloy of copper and zirconium.

38. (Original) The device of claim 23, wherein the base is coated with one or more metal coatings.

39. (Original) The device of claim 38, wherein the one or more metal coatings comprise one or more of gold or nickel.

40. (Original) The device of claim 38, wherein a thickness of the one or more metal coatings is approximately 0.15 microinches.

41. (Original) The device of claim 23, wherein the epoxy layer is electrically conductive.

42. (Original) The device of claim 41, wherein the epoxy layer comprises silver or a silver alloy.

43. (Original) The device of claim 23, wherein the epoxy has a modulus of elasticity of approximately 80 MPa.

44. (Original) The device of claim 23, wherein the circuit board comprises one or more secondary cavities therein, wherein the one or more secondary structures are operable to generally reside within the respective one or more secondary cavities when the base is fixedly coupled to the circuit board.

45-52. (Cancelled)

53. (Currently Amended) An electronic device, comprising:
a base ~~means~~ having a channel and a flange ~~means~~ defined therein;
a circuit board ~~means~~, wherein the base and the circuit board have dissimilar coefficients of thermal expansion; and

an adhesive ~~means~~, wherein the base ~~means~~ and circuit board ~~means~~ are fixedly coupled to one another by the adhesive, and wherein the flange ~~means~~ is operable to substantially maintain a planarity of the circuit board ~~means~~ and the base ~~means~~ during a thermal expansion or contraction of one or more of the base ~~means~~ and the circuit board ~~means~~.

54. (Currently Amended) The device of claim 53, wherein the base means comprises one or more metals or a metal alloy.

55. (Currently Amended) The device of claim 53, wherein the circuit board means comprises a ceramic circuit board having a low coefficient of thermal expansion.

56. (Currently Amended) The device of claim 53, wherein the flange means comprises at least two flanges, wherein a the channel is defined therebetween.

57. (Currently Amended) The device of claim 56, wherein a size of the channel is associated with a size of the circuit board means.

58. (Currently Amended) The device of claim 53, wherein the adhesive means comprises an epoxy having a high modulus of elasticity.

59. (Currently Amended) ~~The device of claim 53,~~ An electronic device, comprising:

a base having a channel and a flange defined therein;

a circuit board, wherein a thickness of the base means is less than five times a thickness of the circuit board means; and

an adhesive, wherein the base and circuit board are fixedly coupled to one another by the adhesive, and wherein the flange is operable to substantially maintain a planarity of the circuit board and the base during a thermal expansion or contraction of one or more of the base and the circuit board.

60. (New) An electronic device, comprising a means for substantially maintaining a planarity of a circuit board on a base during a thermal expansion or contraction of one or more of the base and the circuit board.